

Round 2 Report – EPA Preliminary Issues and Data Gaps
April 10, 2007

Topic	Evaluation Issue	Data Gap
Upstream Data	Was upstream data properly evaluated? What data were used for fate and transport? What impacts does this analysis (especially water) have on the FWM and, ultimately, PRG development? Should upstream tissue samples be used?	Upstream sediment Upstream tissue
Subsurface Sediment	iAOPCs defined exclusively based on surface sediment contamination. Subsurface sediment can be a source of surface sediment contamination (loading term)	Additional cores may be needed to support FS (develop sediment volumes) and to support contaminant fate and transport evaluation.
Application of Fish Consumption AWQC to TZW and Surface Water	SW - For human health, screened against WQC based upon 17.5 g/day not 175 g/day; also used FOD of 5%. If COPC from this screen was in biota, it is eliminated as a SW COPC. TZW – For human health issues related to invertebrate consumption, screened against appropriate WQC but chemicals that screened in were eliminated as COPC if in biota. Also used inappropriate 5000x reduction of WQC. For those chemicals not analyzed in biota (VOCs and cyanide), LWG did an inappropriate evaluation of EPA’s WQC as a justification to not use them. For TZW as a source to SW, performed modeling which needs to be evaluated. The LWG did not evaluate TZW or Surface water against AWQC beyond the screening step.	Collect additional fish tissue in areas of groundwater discharge or perform bioaccumulation studies. May need to measure for VOCs in addition to standard tissue analytes.

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	Opted for evaluation of tissue only. This may be an issue for chemicals such as VOCs in areas of groundwater discharge	
Fate and Transport Modeling	Development of hydrodynamic sedimentation model, fate and transport model and hybrid model is underway. Question about the appropriate upstream data for input into model.	Upstream sediment Upstream tissue
Localized fish tissue data collection	Localized tissue is available for clams, crayfish and sculpin. For other species, tissue samples were composited over larger river reaches. Spatial analysis of risk to these larger-range species is still under evaluation.	Localized fish tissue collection will be needed in specific source areas (e.g., groundwater discharge areas and high concentration source areas). Localized fish tissue collection should focus on small home range fish, particularly in areas of concern not yet (or poorly) sampled. May be useful for understanding impact of localized sources and to assess localized impacts.
HHRA Risk Assessment	Numerous issues related to how risk calculations were performed. Major issues with screening of SW and TZW against PRGs and risk evaluation of use of upstream biota/comparison to PH biota. Need additional maps showing risks above 10 ⁻⁵ and 10 ⁻⁴ for beaches, in-water sediments and bivalves/crayfish risks.	Resolve for baseline risk assessment. Data gaps include lower PAH detection limits for fish and PBDE analysis in biota collected in the future.
Food Web Model	Issues related to food web model parameterization, site specific data used (e.g. water and sediment concentrations/SWAC), and focus on average tissue concentrations.	Additional fish tissue required to improve power of model and to validate.

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Transition Zone Water	Screening levels were exceeded at certain locations. Additional testing may be required to go beyond screening step. Key questions relate to contaminant loading, bioaccumulation and benthic toxicity. Need to compare on maps the locations of TWZ discharge data that was collected to areas where biota were collected, especially for sculpin, invertebrates, and bass to define data gaps. Also need to define on maps other areas where additional TZW/ biota collection/other methods (e.g. caged biota) may be needed.	EPA recommended additional sampling to understand loading (develop flux estimates), bioaccumulation (SPMDs)/caged biota and toxicity (in-situ toxicity testing) associated with contaminated groundwater discharges. Additional data may also be required to understand the role of groundwater in transferring subsurface sediment contamination to shallow sediments and surface water.
Ecological Risk Assessment Screening Step	The SLERA eliminated some key steps. These include the failure to consider SQGs and looking at site-wide averages for the dietary pathway.	Discussion is still ongoing among EPA and its partners whether the screening step needs to be completed to identify data gaps.
Ecological Risk Assessment – Measurement endpoints and CSM	Some assessment endpoints were eliminated from consideration (e.g., bird eggs). ERA CSM still not in agreement with EPA ERA CSM presented in Round 3 Data Gaps Memorandum.	Need to understand why certain endpoints were eliminated. Key endpoints that were eliminated due to lack of data may result in data gaps.
ERA LOE	Not all LOEs evaluated. LOEs not considered include: <ul style="list-style-type: none"> • SQGs (SLERA) • Subsurface sediment (SLERA) • TZW (iPRG) • LRM (iPRG) • Hyallela growth endpoint (iPRG) 	Further evaluation of LOE may result in the identification of additional data gaps.
BSAFs	A lot of variation exists in BSAFs throughout the site. However, it should be possible to develop BSAFs for more chemicals than are being evaluated in FWM. Calculate	EPA recommended additional sediment-tissue pairs to support the development of BSAFs. BSAFs vary widely across the site. Additional data may help develop better

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	BSAFs for those chemicals evaluated in the FWM to determine if PRGs from FWM are protective for biota/humans in specific source areas/AOPCs.	BSAFs – co-located sediment tissue pairs for small home range species.
Hilltopping	Hilltopping has the effect of reducing iPRG levels. Risk management step. Develop risk iso-contour maps to define AOPCs.	Risk iso-contour maps which present multiple LOEs (to include magnitude of risk exceedance) may identify additional data gaps.
Biota Tissue	Concern about the need for additional biota tissue to support/validate the food web model, characterize risks from localized sources, provide a baseline for evaluation of removal /remediation, and understand upstream contaminant levels.	Additional biota needed upstream, to support FWM and BSAF approach, to look at impact of groundwater discharges and to ensure that baseline tissue concentrations are well established.
Tissue TRVs	Two sets of TRVs were utilized. The first set of TRVs were provisional TRVs acceptable for screening. The second set of TRVs are for the baseline ERA and have not been agreed to by EPA	TRVs must be resolved prior to baseline risk assessment.
Total vs. Dissolved concentrations.	Only dissolved concentrations were compared to aquatic AWQCs	Most relevant to TZW. Unclear whether this is a data gap.
Upland Data	Insufficient data to confirm contaminant migration pathways from upland sites to Willamette River	Likely an upland data gap. Further discussion regarding how to proceed is required.
Risk Assessment Scale	Looked at site-wide scale for some key evaluations (e.g., dietary pathway)	Some localized tissue and other data may be required.
Benthic Predictive Models	Only the FPM was used for the identification of data gaps. The LRM approach was used for initial screening only. The LWG presented a different definition of indeterminate risk. PEC Quotient approach not evaluated.	Additional data may be required to improve performance of models or to address areas of uncertainty. This may include additional bioassays or measures of bioavailability.

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Surface Area Weighted Average Concentrations	Biased weighting to areas that were not heavily sampled. This may underestimate average concentrations. In addition, because the analyte list was not uniform, different Thiessen polygons may exist for different chemicals.	Unknown. However, SWAC reduces size of AOCPs and hinders the evaluation of data needs. Need to map out strictly risk-based AOPCS.
Spatial Representation of Data	Although the LWG considered a number of lines of evidence for the identification of COPCs, these chemicals were not presented spatially. Rather, the spatial analysis was limited to iCOCs that exceeded iPRGs, and for a more limited set of LOEs.	EPA identified the need for additional surface and subsurface sediment data (63 cores and 4 surface grabs) to delineate the lateral extent of contamination. Further evaluation of spatial data patterns beyond what was presented in the Round 2 Report may result in the identification of additional data gaps.
Risk Assessment Scale	Data are averaged over too large of an area for some receptors. Uncertainty analyses in report sometimes suggest site-wide measures are not always adequate or appropriately conservative, yet these not carried through to data gaps.	Still undergoing discussion as to whether this is a risk calculation issue, or represents data gaps.
Riparian Soil	The Round 2 Report does not acknowledge this as a Round 3B data need arguing that the riparian area is outside of the “in-water site”.	EPA previously identified the need for additional soil or near shore sediment data to support a riparian zone ecological risk assessment.